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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,501	11/16/2001	Gerald Eugene Tornquist	H0002284	7676

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EXAMINER

ELKASSABGI, HEBA

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 11/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/991,501

Applicant(s)

TORNQUIST ET AL.

Examiner

Heba Elkassabgi

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 17-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a) because they fail to show at least one orifice at each of the first and second ends of the shaft and at least one support wedge positioned between each of the poles and that each of at least one support wedge having at least one supply port in each end open, for as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. "the means for restraining," needs to be clearly and fully disclosed as to what type of means is used for restraining at least one support wedge.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The "means " for extending from at least one orifice needs to

be disclosed fully and clearly as to what that means may be that extends from at least one orifice in each of the first and second ends of the shaft.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnsen (U.S. Patent 5587616) and further in view of Johnsen (U.S. Patent 5298823).

Johnsen (5587616) discloses a generator having a stator (46), a rotor (30), a shaft (32) having a second ends of the shaft (32). The end cap (80) define an end wall portion is circumferentially surrounded by an annular flange. The end cap (80) includes a plurality of radially circumferentially spaced openings around a peripheral raised edge of the end cap (80) and end cap bores that are in the center of the end wall portion. and the means extending from one orifice in each of the first and second ends of the shaft (32). However, Johnsen does not disclose the support wedges in the poles.

Johnsen (5298823) discloses in Figure 1, a rotor (10) having a plurality of poles and at least one support wedge (slot)(18) and the end cap (not shown) having means for restraining at least one support wedge (slot)(30). Furthermore at least one support wedge (slot)(30) comprising the annular flange (121) and that the end cap (not shown) seals the rotor(10) ends and restraining at least one support wedge (slots)(30) on the rotor(10) and that at least one radially cooling medium gallery in the end cap that extends from

the annulus to at least one of the support wedge (slot)(30). In order to improve the rotor of a dynamoelectric machine to allow reductions in the axial lengths and the complexity of rotors.

It would have been obvious to one of ordinary skill in the art to combine the reference of Johnsen (5587616) with the reference of Johnsen (5298823) in order to improve the rotor of a dynamoelectric machine to allow a reduction in the axial length and complexity of the rotor.

In regards to Claim 6, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

Claims 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnsen (U.S. Patent 5587616) and further in view of Johnsen (U.S. Patent 5298823).

Johnsen discloses in Figure 1, a generator with a shaft(32) having an axial bore with at least one orifice that extends radially from a bore at the first and second end of a cooling medium gallery that extends from at least one orifice; at a second end of the shaft (32) through which the cooling medium exits the shaft (32) to at least one inlet supply port (200) and the first end of the shaft (32) through which the cooling medium enters the shaft (32) and exits through the rotor (30). However, Johnsen does not provide a wedge that support the rotor.

Johnsen discloses in Figures 1 and 2, a rotor (10) that is mounted on the shaft (52) and having a plurality of poles and at least one support wedge (slot)(30) that is positioned between each of the poles. At least one support wedge (slot) (30) has at

least one inlet supply port(18) and at least one outlet supply port (18) that is open to at least one axial channel in at least one support wedge (slots)(30). A first end cap(not shown) is disposed over a first axial end of at least one support wedge(slot (30) and at least one support wedge (slot)(30). A second end cap (not shown) is disposed over a second axial end of at least one support wedge (slot)(30) and having a radial cooling medium gallery that extends from at least one outlet supply port (18). At least one support wedge (slot)(30) receives the cooling medium to one orifice, in order to provide a construction of a dynamoelectric machine that eliminates the use of windings and to improve power density , reduce cost, and enhanced reliability.

It would have been obvious to one of ordinary skill in the art to combine the reference of Johnsen (5587616)with the reference of Johnsen (5298823) in order to provide a construction of a dynamoelectric machine that eliminates the use of windings and to improve power density, reduce cost, and enhance reliability.

Claims 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnsen (U.S. Patent 5298823) and further in view of Capion et al.(U.S. Patent 5325009).

Johnsen (5587616) discloses in Figure 1, a generator having a rotor assembly (30) with a plurality of poles , having a central bore and a circular end wall (80a) that is circumferentially surrounded by an annular flange with a pair of end cap openings (200) in the end wall (80a). The bore and the annular flange are fit around a shaft (32) of a

rotor(30) and over an axial end of the support wedge. However, Johnsen does not provide an end cap with openings.

Capion et al. (U.S. Patent 5325009) discloses in Figure 1, the end cap openings (117) are arranged circumferentially in the end wall (148), further having a cooling medium feed port (38a) that is between the openings in each pair of the end cap openings(117) . The manifold includes an annulus with a cooling medium gallery that extends to at least one support port (38a) in the support wedges (134). Each pair of end cap opening (117) is arranged along a radial line in the end wall (148) and at least one of the openings in each pair serving a cooling medium feed port (38a). The end caps (148) have a raised peripheral edge with a plurality of circumferentially spaced openings. The end caps (148) include a manifold at the hub in the interior of the end cap (148), in order to provide an integrally formed wedge for securing end shaft portions of the rotor shaft to a core of the rotor.

It would have been obvious to one of ordinary skill in the art to combine the reference of Jo

In regards to Claim 15 the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heba Elkassabgi whose telephone number is (703) 305-

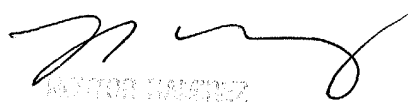
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2723. The examiner can normally be reached on M-Th (6:30-3:30), and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

HYE  
November 16, 2002



NESTOR RAMIREZ  
ARTS AND SCIENCES EXAMINER  
NOV 16 2002